

Appl. No. 10/605,563
Amdt. dated May 04, 2006
Reply to Office action of February 07, 2006

Amendments to the Claims

Listing of Claims:

- 5 Claim 1. (Original) A method for automatic gain control (AGC) in a receiver of a multiple-antenna system comprising a plurality of modules having a plurality of receiver antennas for substantially simultaneously receiving a plurality of signals via a single frequency band, the method comprising:
- 10 amplifying the plurality of received signals with at least an amplifier;
 generating a plurality of time domain samples of the amplified signals with at least an analog-to-digital converter (ADC) connected to the amplifier;
 determining at least a candidate power according to root-mean-square (RMS) powers of a first group of symbols received at the receiver antennas with a processor connected to the ADC; and
15 setting the gain of the amplifier according to a selected candidate power with the processor.
- Claim 2. (Original) The method of claim 1 wherein the received RMS power for one antenna is determined as the square root of the averaged product of each received
20 symbol and its complex conjugate for all symbols of the first group.
- Claim 3. (Original) The method of claim 2 wherein the candidate power is an RMS value of the RMS powers for each antenna determined for a second group of antennas.
- 25 Claim 4. (Original) The method of claim 3 wherein the second group is all receiver antennas.
- Claim 5. (Original) The method of claim 3 wherein the second group is receiver antennas

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having RMS powers larger than a first threshold.

Claim 6. (Original) The method of claim 3 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

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Claim 7. (Original) The method of claim 3 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

10 Claim 8. (Original) The method of claim 2 wherein the candidate power is an arithmetical mean of the RMS powers for each antenna determined for a second group of antennas.

15 Claim 9. (Original) The method of claim 8 wherein the second group is all receiver antennas.

Claim 10. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers larger than a first threshold.

20 Claim 11. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

25 Claim 12. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

Claim 13. (Original) The method of claim 2 wherein the candidate power is a geometric mean of the RMS powers for each antenna determined for a second group of

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antennas.

Claim 14. (Original) The method of claim 13 wherein the second group is all receiver antennas.

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Claim 15. (Original) The method of claim 13 wherein the second group is receiver antennas having RMS powers larger than a first threshold.

Claim 16. (Original) The method of claim 13 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

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Claim 17. (Original) The method of claim 13 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

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Claim 18. (Original) The method of claim 1 wherein the set gain is a target power divided by the candidate power.

Claim 19. (Original) The method of claim 1 wherein the symbols are IEEE 802.11a or 802.11g short preamble symbols of the received signals.

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Claim 20. (New) A method for automatic gain control (AGC) in a receiver of a multiple-antenna system, the method comprising:
receiving a first signal by a first antenna;
receiving a second signal by a second antenna;
amplifying the received first signal to generate a first amplified signal with a first amplifier;
amplifying the received second signal to generate a second amplified signal with a

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- second amplifier;
 - generating a first plurality of time domain samples of the first amplified signals;
 - generating a second plurality of time domain samples of the second amplified signals;
 - determining a first candidate power according a first group of symbols;
 - 5 determining a second candidate power according to a second group of symbols;
 - selecting one selected candidate power out of the first candidate power and the second candidate power according to a predetermined rule; and
 - setting a gain of the first and second amplifiers according to a selected candidate power.
- 10 Claim 21. (New) The method of claim 20 wherein the first and second candidate powers are determined according to root-mean-square (RMS) powers of the first and second group of symbols respectively.